

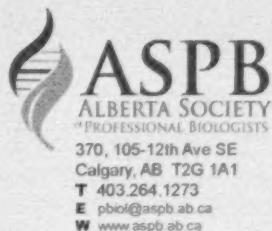
BIOS



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**WITNESS
TO CHANGE:**
an ASPB
founder
looks back



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Photo by: Janet Ng. See note on this page.

BIOS

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...notes from the E.D.

The Alberta Society of Professional Biologists turns forty this year - an immense achievement by its founding members and - over four decades - a tremendous effort by the Society's contractors and volunteers who have worked tirelessly to bring us to where we are today.

The past forty years have seen much change in the ASPB. The Society has grown to over 1700 members, and further growth is imminent with the expected addition of technologists. There is growing interest from practitioners in practice areas currently under-represented in ASPB, such as microbiology and toxicology. And as Professional Biologists move up in their careers, they move from traditional field work to the application of biological principles to better manage resources. These shifts move ASPB from the traditional environmental biologist to a more diversified membership representing biologists in all practice areas.

To mark this change, the ASPB recently contracted the services of a graphic design firm to develop a new logo which would not only respect the history of the Society but also acknowledge where it is going. In creating the new logo the ASPB wanted to represent the entire breadth of the biological sciences; the new logo features a stylized DNA strand representing what is common to all life, with a leaf respecting the strong roots of the ASPB and continued growth of the society. This logo will form the basis of the new ASPB brand which will be incorporated across all the ASPB's electronic media and print materials this winter, including the ASPB website.

When the ASPB website was originally built in 2007 there were only 700 members. Since then, the website has grown organically, with new features being added as needed. Over a long period of time, this process can cause administrative problems, and these have been increasing as the site sees increased usage. In order to better serve current members - and to make the application process smoother for new members - a new site has been under development since early last fall. The new site will be fully launched in February.

There is so much more to do, and there is even more to celebrate! The ASPB "Witness to Change" Conference in the spring will combine a celebration of those forty years with perspectives on current regulations and the practice of our honoured profession. See you there!

Jennifer Sipkens, ASPB Executive Director

Cover Photo

This female ferruginous hawk nestling had just been freshly banded with a National Banding Office band which carries a unique serial number and an uniquely coded coloured alpha-numeric leg band that is field-readable through binoculars or spotting scope. She is also wearing a new VHF radio-tag attached to her tail, which is barely visible in the photograph. These leg bands and radio transmitter are used to track survival and habitat selection, part of a collaborative research project of the University of Alberta and Environment Canada studying ferruginous hawk ecology. Photo by Janet Ng, P. Biol., in 2010 near Medicine Hat, AB.

An update from the ASPB President

by Christopher Clement, P. Biol.

As I sit to scribe the BIOS winter president's blurb I reflect on the season at hand and the year that has been. By the time this is read we will be well into January, so my first order of business is to wish all of you, on behalf of the board, a prosperous and healthy New Year.

As we chart a course through somewhat troubled economic waters, it occurs to me how the ASPB has continued to grow and flourish. We are now over 1700 members strong and given the continued onset of environmental issues requiring biology professionals, there is no sign of our society slowing down. The likely inclusion of technologists in the future will only increase our strength. Since the government is

taking longer than anticipated, we will be introducing bylaw changes to bring registered technologists in biology into the fold (temporarily without the power to seal documents).

The current board has been working with policy governance for almost a year now which has allowed for extensive discussions on some of the key issues facing biologists in the future. Talks with the chemists and foresters regarding the potential for a new inclusive act have stalled and no additional meetings have been planned. The board is taking a cautious approach to the proposed act and is not convinced there would be tangible benefits.

2015 will be another busy year for the ASPB with a new Registrar, new state-of-the-art web site, the potential for over 2000 members, and increased demand for biology professionals and technologists. On top of that we will be celebrating our 40th anniversary with a retrospective conference and AGM in Canmore in April; I look forward to seeing many new members and old friends as we gather to celebrate this milestone and to learn and share best practices in our special profession.



Where are we headed... and who decides?

by Karoliina Munter, P. Biol.



From time to time, it is worth asking where the Alberta Society of Professional Biologists is headed as an

organization, and who decides what our goals are? A forward-looking and strategic board, which the ASPB board strives to be, sets clear long-term goals for an organization. But how does the ASPB board decide which goals to set for the ASPB – is it simply up to the 12 individuals' opinions?

The answer is no; the board exists to provide a connection between the interests of the owners and the long-term goals of the ASPB. "Owner" is a term used in the Policy Governance® model to define those people to whom the organization owes its existence.

Who, then, are the ASPB's owners? The legislation that gives ASPB the authority to govern professional biologists in Alberta is based on public protection; following this principle, the ASPB board has defined our Society's owners as the public of Alberta, which includes ASPB members as a sub-group.

Under Policy Governance, the board has a *duty to connect directly with owners in order to be accountable to them and inform its policy development* (Brown Dog Consulting 2012. Policy Governance 101 Workbook). This ownership linkage is recognized to be a two-way communication between the board and the organization's owners. The board needs to get input from the ownership as well as to share information on what the board does.

The board needs to solicit input from the owners for setting the long-term goals of the ASPB. Under Policy Governance, the board sets Ends Policies, which state

the reason for the organization's existence (Ibid). Ends Policies are intended to answer the following questions:

- what benefit should the organization produce?
- for whom?
- at what cost?

To be able to set informed Ends Policies, the board needs to take into account the owners' values and views of what the ASPB should achieve (and avoid). On the other hand, the board also needs to engage the owners to inform them of who the board is and what the board is doing.

The ASPB board is working on an Ownership Linkage Plan, which will include measures to connect with our owners, including the membership. Stay tuned for the board's plans to engage you in setting long-term goals for ASPB!

Karoliina Munter, P. Biol., is the 2014/2015 past-president of the ASPB

From avocation to vocation: an entrepreneurial biologist's journey

by Christine Godwin, P. Biol.



Ken Foster banding a Merlin.

If you were to ask Ken Foster (PhD., P. Biol.) what it takes to succeed as a biologist, patience and perseverance are likely what he would tell you. After three decades of defining his career through academic pursuits and work in government, consulting, and industry, Ken has finally landed on his original aspirational target.

Ken was always interested in a career as a wildlife biologist, and began his first steps in that direction while still in high school as a summer intern with the Jasper National Park Conservation Corps. Ken completed his undergraduate degree in Biological Sciences at the University of Guelph in 1981, but - as many students have experienced over the years - there was little work available in Ken's chosen field of interest when he graduated.

Ken's first work experience after university was with Agriculture Canada at the Lacombe Research Station, which was the start of Ken's career detour through the plant sciences. Still determined to work with wildlife, and discovering his passion for birds, he found an opportunity to manage a bluebird nest box trail as a volunteer, along with banding bluebirds and tree swallows near Lacombe. He quickly learned that volunteering can provide a great opportunity to develop the skills you need to pursue your goals.

After four years, another opportunity came up that would help define Ken's career. He returned to University in Calgary,

and completed a PhD in plant hormone physiology. Surprisingly, his research into how plants sense and respond to changes in their environment was not far from his broader interests in environment and conservation; there are similarities in plant and animal physiology, and these translate into the understanding of anthropogenic impacts on the environment.

After completing his PhD, Ken accepted a Post-doctoral position at Texas A&M University, in College Station, Texas. The position was a continuation of his plant physiology research, where he improved upon the methodology to measure plant hormones. Although there were fewer opportunities to pursue his wildlife-related passions, he still found personal time to learn the birds in Texas, and even spent time volunteering for Habitat for Humanity in that state.

In 1995, Ken returned to Alberta and a position with Alberta Environment as an Air Quality Phytotoxicologist. During his time with the provincial government, he was involved in developing provincial air quality objectives and policy documents and participated in the oversight of research and stakeholder committees related to the oil sands and petrochemical industries. Involvement with an Environmental Impact Assessment review and consultation broadened his network, and in 2001 he accepted a position with AMEC Infrastructure and Environment, then (in 2006) joined Birch

Mountain Resources, now Hammerstone Corporation, in managing their regulatory and environmental requirements for limestone quarry development in the oil sands region near Fort McMurray.

The opportunity for Ken to finally pursue his passion for birds came when he began volunteering for the Calgary Bird Banding Society in 2007. Through the CBBS, Ken improved his bird identification, aging, and banding skills, and volunteered for bird migration monitoring programs in Calgary, Cypress Hills, and Costa Rica, and northern saw-whet owl monitoring in the foothills southwest of Calgary, and further developed his bird banding skills through other volunteer opportunities at Colony Park in Vancouver, and the Long Point Bird Observatory in Ontario.

Ken incorporated his own company (Owl Moon Environmental Inc.) in 2009, and in partnership with Christine Godwin, founded the Boreal Monitoring Avian Productivity and Survivorship (MAPS) program in the oil sands region. The program combines broader research on bird populations in the boreal forest with understanding the effects of oil sands development on birds.

One of the key components of the program is the opportunity for biologists to volunteer and broaden their interests and experience. Ken has always enjoyed teaching, and giving back to young people an opportunity to learn about what volunteering provides. As their skills develop, we hope the aspirations of these young people to work in the environmental field will also be fulfilled.



Membership renewals are underway

ASPBB Membership renewals have been underway since January 1, 2015. According to the ASPBB by-laws, a Member will cease to be in good standing if membership dues (plus any late renewal fees) are not paid within four (4) months of the due date!

Witness to Change: An ASPB founder looks back



Don Thompson.

Donald C. Thompson earned his B.Sc. with honours in Zoology from the University of Alberta in 1974, and his Masters in forestry and wildlife management two years later from the University of Toronto. He received his Executive MBA in 1988 from the University of Western Ontario. Much of Thompson's career has been in the oil and gas sector, both as a private consultant and also with Syncrude Canada (for 32 years, 18 of which he served as an Officer of the Corporation), the Oil Sands Developers Group (as its President), and Canadian Oil Sands Ltd. Most recently, Thompson served as a Member of the Steering Committee of Alberta's CCS Regulatory Framework Assessment, and as Co-Chair of the Expert Panel for that process. This work resulted in the publication of Alberta's "Carbon Capture and Storage Regulatory Framework Assessment". BIOS spoke with Thompson from his winter home in Arizona.

BIOS: In 1985, *The Professional and Occupational Associations Registration Act* passed its third reading in the Alberta Legislature and became law. In the 1985 paper "History and Status of the Professional Biologist in Alberta" of which you were an author along with J. A. Smith, D. L. Dabbs and S. B. Smith, it is noted there had been some debate within the Society about the relative merits of obtaining Exclusive Right of Title (which currently exists) versus Exclusive Right to Practise, which was passed over at the time. In retrospect, have you any thoughts on this?

DCT: Well, let's start by clarifying with examples the difference between the two: Right to Practice is what lawyers, medical doctors and engineers have, where you must have that designation to practice the profession. With biologists and Right to Title, anyone can practice biology but you can't call yourself a Professional Biologist without the P. Biol. designation from the ASPB.

In those days, there was a tremendous amount of discussion, but in the end the government did not wish to create more "right-to-practise" professions. We were told fairly clearly it would be Right to Title or nothing.

The way we looked at it was "alright, we'll take Right to Title and then we will work to make the title valuable in and of itself. In other words, there were two ways to do it: one is to earn your rights in the court of public opinion, and the second is to be given it in legislation, and we weren't going to be given that so we started out to earn it through gaining public trust. We believed that the biologist ought to be held in the same evidentiary value and should have to live up to the same standards of the Right to Practise professionals.

BIOS: In your opinion, has that proven out?

DCT: To some degree, yes, although to be frank it is not uncommon to be in situations where people who clearly have no professional training have biological or environmental views which are taken with equal weight as those who do (have the training). I find that to be disappointing, and so I feel we still have a ways to go. I think if I were to stand up at a regulatory hearing and made an engineering-type comment, I would be taken zero evidentiary value, and yet I see people stand up with no biological background or basis and make environmental comments which are taken as having merit.

BIOS: Over the last 30 years, the Alberta Society of Professional Biologists has certainly grown in stature and – with over 1700 members as we speak – grown in numbers. Now, the Society is planning welcome biology technologists into the fold in the near future. In those formative years, was this kind of growth part of the vision of the founders, or was it perhaps only a dream?

DCT: Obtaining Right to Title for Professionals was the primary goal. However, just as the engineers have engineering technologists, there is no reason why the ASPB should not have

biological technicians in their organization as well. So, back then it wasn't our focus because we were busy growing the profession, but now, having accomplished that I see no reason not to broaden it out, but they do need to be distinct and have separate titles.

BIOS: The 1985 paper comments: "A serious constraint in developing 'professional status' for biologists in Alberta has been the poor attitude of academic institutions in recognizing the need to train biologists in professional conduct and to support the goals of the Society." Do you sense that much has changed in that regard?

DCT: To some degree, but not really. I need to explain: universities are there to train people. Engineering schools train people differently from pure science streams; they train them to make decisions, to make risk-based judgements and things like that. Pure science streams (which biologists tend to be) are not trained to make risk-based judgements; that is something I think universities need to come to grips with.

Having said that, I think it is very important that biologists have a very strong academic foundation. If anything, that is the part that worries me. I see universities tending to water down the academic strength of their degree compared to, say 20 or 30 years ago. There must be a solid basis in academics before so-called "real world" applications should be considered, and there has been a tendency to go to bachelors-level degrees like "environmental sustainability". I don't see that – you need to solidly understand the science at a bachelors level first.

BIOS: In the 1985 document, it is noted that "the attitudes of biologists, the public, government, and industry in Alberta have changed radically over the last 25 to 30 years; this change has altered the role of biologists in society." Another three decades on, as the ASPB celebrates its fortieth anniversary, have you witnessed even more substantive change?

DCT: I think there is no doubt that in Alberta, obtaining biological input is now a "given". I don't think, nowadays, there is any approval process that that would proceed in the absence of credible scientific biological input. That was not true 30 years ago!

BIOS: Thank you!

A Boreal Biologist in Brazil

by Margaret Marra, P. Biol

The timing seemed perfect. I am a Professional Biologist with experience in vegetation and wetlands. I had been working with Shell Canada as an Environmental Planner for two and a half years; it was February and bitterly cold. Ever since my colleague had been on a Shell "Project Better World" trip to Churchill, Manitoba to help measure growth indicators in peatlands, and other wetland indicators, for the effects of climate change in the north, I was hooked. Fascinating stuff, with whales, caribou and polar bears (albeit very skinny ones) to boot!

I approached my Team Lead about participating in the Project Better World (PBW) program, citing my commitment to sustainable development and how we need to embed the principles into our business, and the fact that I would need Shell to fund my travel and allow me to work for 10 days elsewhere. After getting his support, I opened the PBW (fondly renamed Peanut Butter World) web page and browsed the available projects. There were three that really appealed to me; Brazil, Malaysia and the UK.

Churchill, Manitoba had a cool project, but that area has two seasons; winter and bugs, so I was a little less enthusiastic about the project. This was my first application in the program and others had been applying for years and I had been advised I needed to present a good business case for participation. When the email arrived from Earthwatch in April telling me that I had been accepted for the Brazil project, I was, in turns, thrilled and apprehensive. Travel to South America had never been on my list of destinations and I knew next to nothing about Brazil. But to go to the Atlantic rainforest was beyond exciting!

Earthwatch is an international environmental non-profit organization. Its website states that its mission is "To engage people worldwide in scientific field research and education to promote the understanding and

action necessary for a sustainable environment." The Earthwatch Institute brings individuals from all walks of life (members of the general public called "citizen scientists", corporate employees, educators and students) together with world-class scientists to work for the good of the planet. Shell PBW is a global, staff-driven platform that aligns Shell volunteering initiatives for a better world. It is aimed at building



Margaret holding Azure-shouldered Tanager. Photo Credit: Shell PBW team November 2013.

awareness of sustainable development and creating value through the provision of volunteering opportunities in the economic, environmental and social spheres, in which Shell is a stakeholder.

Shell sends employees from all areas of our organization and all parts of the world. Our team of eight came from Canada, Nigeria, The Netherlands and Germany, and our jobs ranged from petrophysicists, geologists, petroleum engineers, chemical engineers, and yours truly, a biologist. Shell wants to educate employees and get them thinking about sustainable development in the places that we operate around the world. One of the benefits for me was an opportunity to socialize and understand other perspectives within Shell and connect with colleagues with different cultures on problem-solving activities; another was to broaden my perspective by working as part of a field

crew in an entirely different ecosystem than the Boreal forest I know so well.

I have already given a "lunch and learn" session to the ASPB on the research that Ana-Paula Giorgi and others are conducting on biodiversity in the Southern Atlantic rainforest, so I will not touch on it here. Our part of the research was to gather information about birds on a mixed farming operation,

including what birds are there, their physical characteristics, and what kind of habitat they prefer. We started out in the farmyard itself to learn how to set up nets and how to untangle the birds and handle them gently. Then we moved towards the jungle, stopping in less intensely grazed (and regenerating) pastures, and eventually moving up beyond the riparian zone of the nearby river to the undisturbed forest.

When I look back at my travel diary, I am struck by

how often I mentioned the heat, the humidity and the sheer volume of life everywhere. Many of my preconceived notions about tropical life were turned upside down, one of them being that "temperate and humid = large". The "mosquitos" that plagued us were barely visible – about the size of what we Albertans call gnats. They were everywhere and because we were concerned about poisoning the birds as we handled them, we couldn't wear DEET on our hands. After three days I couldn't make a fist with my left hand and I couldn't move my right pinkie at all, the bites were so itchy and swollen. One of our team members was robbed of sleep by the itching, so he always volunteered to set up the next round of nets, sprinting ahead of the group in the hopes of avoiding the clouds of bugs that followed us.

As there is never anything entirely negative about anything, our reaction to



Green-beaded Tanager. Photo Credit: Shell PBW team November 2013.

the bug bites allowed us a trip to the small town just down the highway. The highway is very similar to what we know in Alberta as a "lease road" – barely any gravel, mostly packed mud, slippery when it is raining and very, very bumpy. We visited the local health clinic and received excellent (and free) health care. I was struck by the simplicity of the clinic – it was old, but clean and there were scales for babies that I have seen in old photos from the 1950s. We got some much needed cream and antihistamine liquid, and I slathered my hands as soon as we got back from the field around noon and wrapped them up with gauze, which made for some alarming photographs of me. But it did the trick – it's hard to scratch when your fingers are bound up!

After the trip to the clinic, we were advised we could apply DEET to the backs of our hands as long as we kept our palms free of it. Most of us soldiered on without it, but I was pleased to find out you can buy 100% DEET in the UK. In Canada and Brazil the most you can find is 30%, but I can only imagine the bugs in the UK that you would need this for – a hazard not mentioned in the travel guides to Britain perhaps?

As a vegetation specialist, my love is for interesting vegetation and vegetation communities, and I was excited to find some vertical vegetation communities,



Crescent Chested Puff Bird. Photo Credit: Shell PBW team November 2013.

Often, the amount of plant material growing on trees causes the branches to fall without warning and accompanying (what seems like) sonic booms. Jokes about jaguars were not appreciated. On my first day at the farm I took several photos of one such branch rich with bromeliads, orchids, mosses, ferns and lichens, not to mention the ants, beetles, spiders and all manner of creepy crawlies (sorry entomologists!)

This leads me to the story of one of my fondest memories of the farm and I marvel at how nature adapts. It was our eighth day, only two more to go and we were rained out of the field that morning. November is the typical rainy season, and this one had actually started three weeks early before we got there, so we were disappointed on a number of occasions. We were hanging around the main farm building which has a nice covered patio, doing a bit of desultory bird watching between rain showers. I was sitting by myself looking out onto the water-lily pond and I noticed something flitting around the mowed grass somewhat near the water. I caught the movement and it was fairly far away, so I moved a bit closer and waited for something to move again. Then I saw a beautiful blue/green hummingbird rise from the grass and alight in a tree close to the water's edge.

I don't know much about birds, but I thought that the mechanics of the hummingbird would have put quite an energy burden on the poor thing, and what on earth could it be doing on the ground? I moved closer to where I had seen it rise and then I saw a tiny heap of sticks on the ground. I went a wee bit closer, mindful of where the hummingbird was in the tree (I'm

no rookie to bird attacks), and there I saw the pitiful remains of a cup nest amongst the twigs, and two very small, very wet baby hummingbirds. As I watched, Momma came back from the tree and stuffed food in their beaks and then laboured upwards again. I beat a hasty retreat and found my colleague with a good camera and we called the ornithologist over. He confirmed it was a female Black-throated Mango and that the nest was probably originally in the tree she was perched in and the rain had caused it to fall. The babies were almost old enough to fledge (probably 2-3 days out) which is why they were still alive. We didn't want to disturb the family anymore and Momma was obviously up to the task of feeding them, so we left them alone and I worried about the farm dogs and the piglets running around. I hope the little hummingbird family made it.

I am constantly amazed at the variety of life we see on Earth and the connections we all have to it. I was lucky to be a small part of the research field team and I hope that the data we gathered (139 birds, 62 species and 5 IUCN listed species) will help the researchers model how farming practices and preserving parts of farms in protected areas can contribute to preserving biodiversity in the Southern Atlantic Rainforest.

Margaret Marra graduated from the University of Alberta with a Bachelor of Science degree in Biology and a Bachelor of Education degree in Secondary Education. She has worked as an Environmental Technician, Technologist and Scientist in the Environmental consulting field in Alberta and British Columbia, specializing in vegetation ecology and wetlands. Margaret is a Professional Biologist (P. Biol.) with the Alberta Society of Professional Biologists (ASPB) and a Registered Professional Biologist (RPBio) with the British Columbia College of Applied Biology.



Awards Nominations Deadline:

Please note that the nomination deadline for the following awards is February 1, 2015.

- Peggy Thompson Publication Awards
- Dr. J. D. Soper Award
- ASPB Volunteer of the Year Award
- ASPB Distinguished Service Award

For full information on ASPB Awards, please go to the Society's website.

Legal Expense Insurance can help professionals and their practice

The following article was submitted by Jordan Fellner of Hub International, a professional insurance provider and an Alberta Society of Professional Biologists membership benefit provider:

For many professionals, the costs associated with unexpected legal issues can lead to serious financial loss and even bankruptcy. For those ASPB members who have purchased E&O coverage with HUB International, you now have coverage for Legal Expense Insurance, underwritten by ENCON Group Inc at no additional cost. Legal Expense Insurance provides you with:

- **Unlimited telephone legal advice** through a toll-free legal advice line, with 24/7 accessibility to a lawyer who can answer any legal questions you may have, regardless of whether the legal issue is covered under the policy or not.
- **Financial protection from costly legal fees.** The average fee for an

experienced lawyer is \$379 per hour, while the average cost of a two day civil action is \$37,000.

- **The ability to defend or pursue your legal rights,** backed by financial security to continue your legal action, knowing your claim will be handled by expert lawyers.

Here are a few risks your business might face where a legal expense insurance policy will help:

- **You might need to deal with a poorly performing employee.** There can be legal ramifications to decisions made around disciplinary meetings with or termination of an employee. If you need guidance on the legal aspects of what to do in such situations, your legal expense insurance policy provides you with Unlimited Telephone Legal Advice relating to any legal matter.
- **You might get audited.** The Canada Revenue Agency may ask you to

prove you've accurately reported and paid your business taxes. Your legal expense insurance policy will provide Tax Protection, defending your business when responding to a tax audit or appealing a decision.

- **A supplier provides substandard service.** If you place an expensive order for goods or services, and not only receive substandard services or products but also find the company is refusing to honour its quality commitment, your legal expense insurance policy will provide you with coverage in the event of a Contract Dispute.

For more information, visit www.bubprofessional.com or contact account manager **Jordan Fellner** toll free at 1-800-606-9969 or by email at jordan.fellner@hubinternational.com.

Revitalizing the mentorship program

from a report by Semiyu Aderibigbe, PhD

Research shows that mentoring is a viable mechanism for strengthening personal and professional skills (Aderibigbe, 2013; Barrera, Braley and Slate, 2010). Consistent with this, the ASPB mentoring program was initiated to provide a platform for ASPB members to share knowledge, expertise and experience in order to foster their personal and professional development.

Results from a brief survey in November, 2014 (of Society members who have been involved with the ASPB program) showed that the majority of the respondents acknowledge the relevance of mentoring, mainly as a tool for sharing career guidance and technical knowledge. In this context, the following potential modifications are being given consideration:

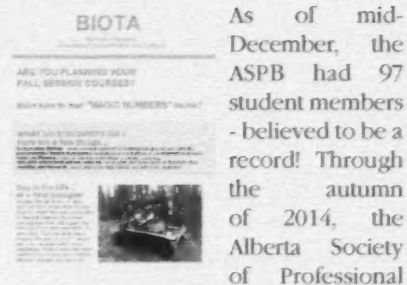
- Re-conceptualization of mentoring as a two-way process.
- Guidelines for the effective implementation of mentoring programs.
- Information about the GROW model as a template for facilitating mentoring processes.
- Orientation sessions for participants.

- On-line training on mentoring process.
- Guidelines for facilitating learning conversation between experienced ASPB members and BIT members.

With the suggested modifications, it is anticipated that the ASPB members would be able to enjoy the maximum benefits of the ASPB mentoring program. Members are advised to read the participant handbook, ask questions when necessary and dedicate time for active engagement in the mentoring process in order to have a more rewarding experience. Members are also welcome to offer suggestions for consideration in order to promote and strengthen the program.

Semiyu Aderibigbe holds a doctoral degree from the University of Aberdeen, UK. His research interests include mentoring and coaching, professional development, and teacher education. He has more than 10 years of scholarly experience in diverse contexts internationally and was recently appointed as a consultant for the mentoring program at the ASPB. The full paper will be posted on the ASPB website in the mentorsip section.

ASPB reaches out to students



As of mid-December, the ASPB had 97 student members - believed to be a record! Through the autumn of 2014, the Alberta Society of Professional

Biologists has attended Career Fairs at Lakeland College (Vermillion), the University of Lethbridge, the University of Alberta, and will be at Concordia University in January. We have begun sending **BIOTA**, an e-newsletter, to our student members; we are hoping for greater feed back from our students over time to make the content more meaningful and immediate, but certainly **BIOTA** has had good readership so far, according to internet statistics. The first edition went out in September, the second in December, and we are planning the year's third edition for early March.

In conversation...

On being a biology technologist

Shona Derlukewich graduated with honours from the Northern Alberta Institute of Technology in 2005 where she studied renewable resources. She received the Right Honourable Don Mazankowski Scholarship (Biological Sciences Technology) in 2004, based on academic achievement and demonstrated leadership skills in college and community environments. She also received the Jason Lang Scholarship and was on the Dean's Honour Roll at NAIT in 2004-2005; she is currently a fisheries biologist with Stantec. For the following article, Shona collaborated with BIOS through written notes and telephone conversations in October and November of 2014:

BIOS: *Everything about Shona Derlukewich, as a student and through your work and volunteer involvements, paints a picture of a person of determination and passion for your field. Congratulations on all your accomplishments to date! Perhaps you could talk a little about what drew you into biology in the first place?*

SD: Growing up, I loved the outdoors and dreamed of a career as a park ranger. As the years went by, I became somewhat disgruntled about many of the occupations in the workforce and decided to upgrade my education in biology after talking with a friend. Her career path in conservation biology at the University of Alberta was a dream job in my world!

After spending many years in the workforce, the daunting task of becoming a mature student became my reality: I attended university for the first year, and then discovered the program at NAIT (Renewable Resources). This course provided the necessary field skills I was looking for, including entomology, mammals, fisheries and ornithology.

BIOS: *Why are you excited about joining the ASPB?*

SD: A lot of it has to do with networking and mentoring. The ASPB offers so

many exciting opportunities to network with professionals in biology. Attending conferences and sessions hosted by the ASPB is a great way to meet other professionals, which can lead into so many opportunities such as employment, professional development and career satisfaction. It is also great to have "geek out" days with other fish people who

lifelong endeavour for every person, long after they have completed their education (degree or diploma). The ASPB provides many opportunities to attend courses and conferences, while building a networking group with social activities. I have had the pleasure to teach as well as be a student, and through instructing courses I continue to develop my own skills as I train future and practicing biologists; this is rewarding in so many ways!

Science and technology are always changing, and there are many different learning opportunities. Whether it is being current with changing federal regulations or updating certification status, a professional is required to have this knowledge so they can make appropriate decisions; this should also apply to technologists as the changing field conditions and data collection techniques require consistent updates.

BIOS: *How about standards of competency and conduct for a technologist?*

SD: Technologists collect valuable data

and are required to be fully competent in a field environment. Without correct training and regulations, data collection could be insufficient and the reporting would be inaccurate. The majority of the biology-based services offered by employers requires a field component; if a professional biologist is held accountable to the public, the same accountability should be required from a technologist. Reports are only as good as the data collected, so both technologists and professional biologists need to share a true understanding of the important roles that each play.

All technologists should have recognition as professionals in their field and be held accountable for their work and ethics. Regulating technologists with biologists will provide a networking opportunity and growth between the two currently separate designations.



Shona Derlukewich shows off a burbot (a.k.a. lingcod). This slimy eel-like fish species hangs out in riverine and lake systems; interestingly, as slimy as they feel, they actually have microscopic scales.

love fish as much as I do; you meet new acquaintances who could become lifelong friends!

Mentoring is one of the key characteristics I look for in a professional society. Mentors provide life experiences you will never learn from a book. These unique situations are quite inspirational, encouraging mentors and protégés to exchange ideas, and mentors support your career development. Mentors are people you look up to and imagine yourself in their role five years into the future.

BIOS: *So you see professional development opportunities as an important reason to seek technologist designation?*

SD: Achieving a professional designation is a career changer. It is more than just a matter of personal satisfaction; it demonstrates to clients, employers and agencies that you are competent and knowledgeable in your designated field. And with that status, professional development should be a

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Field skills and reporting are extremely important skills. Technologists are required to document field work, and biologists are required to report the data collected in the field, so both technologists and biologists are required to have an understanding of field collection and reporting duties or the objectives will not be met. Each role is crucial to one another; I believe more interaction between technologists and biologists will help protect the public while creating memorable career paths for each of them.

BIOS: *Perhaps we could talk about just how your job differs from those who have P. Biol. designations?*

SD: Field programs are very often an essential part of the practice of biology. Technologists provide amazing field support and understanding of their surroundings. They provide biologists with technically sound field data, they are competently trained in various sampling techniques, and they provide documentation of field activities. Many technologists are what I call the "die-hard field staff" who can withstand the weeks - even months - of unrelenting punishment which you often find in field work: from

the bone chilling winters to the heat and insect-filled swamps of the summer months, technologists battle the elements to collect accurate data.

Depending on the scope of work, the majority of a technologist's role is to prepare and complete those field programs. Professional biologists will secure the work through client interactions and proposals, and technologists will work closely with the biologist to develop a field program to suit the client's requirements. Technologists will then lead the field program in various aspects including logistics, health and safety, equipment organization and field program execution. After the field program is complete, the technologist files all paperwork and provides field notes to the biologist who interprets the data and writes the report. And of course, office duties for technologists include data entry, mapping, permit returns and on occasion some data analysis.

BIOS: *About those field notes: ensuring they are accurate and complete must be of primary importance.*

SD: Truly, field notes are the most important aspect of the field program. The technologist is usually the first point of contact in a field program, and as a field technologist may engage contractors, the technologist must have full knowledge of the regulations pertaining to the project. Actions which may be necessary include documentation, a recital of pertinent regulatory requirements to the contractor(s), and reporting requirements which the technologist must follow under the regulations. Field notes should document all important activities.

BIOS: *The opportunity to become a member of the ASPB as a registered technologist will be significant for you. Is that a goal unto itself, or is there more?*

SD: I am looking forward to being able to become a member of the ASPB as a registered technologist and I think that status is important for career people like myself. Perhaps, some day, I will return to university to obtain a BSc degree and seek to be re-classified as a professional biologist, but I am not working as a technologist because I can't become a P. Biol. This is my career, and I am passionate about it!

About microbiology and grizzlies

In the autumn edition we featured an interview with Dr. Markus Thormann. After the core interview was over, BIOS proposed the following issue: "We know that biology is defined as one of the four fundamental life sciences. It seems logical to propose that microbiology is, in fact, fundamental to everything that is biology, on the premise that if the cellular structures fail, nothing works." We asked Dr. Thormann if he would care to respond to that statement; he had this to say:

"I couldn't agree more. Here is an example of why this is so: years ago, the concept of 'keystone species' came up, where people looked at the big fuzzy critters, the charismatic megafauna, that everybody likes to see in a National Park - a grizzly bear or a moose, for example, and made the assumption that if you have that grizzly bear, everything else below that in the food web is just fine.

"I had an issue with that concept back then, and I had more and more of an issue with it as I did my own Ph.D. in mycology, realizing that the grizzly bear (for example) is really just one organism, and it is being used by some of the keystone species supporters as an indicator of a healthy ecosystem, which to me doesn't make particular sense.

"It's like looking at a house and seeing the chimney and saying that if you have a chimney then the rest of the house is great, without even having a look at the foundation. But from a biological perspective, without the "foundation organisms", if you will, of an ecosystem - the fungi and bacteria that drive nearly all biogeochemical processes, for example, the decomposition of organic matter, the cycling of many nutrients, supporting plant life, etc. - there wouldn't be an ecosystem for that grizzly bear to live in.

"Microbiology is critical from an ecosystem function perspective, and it's at the base of everything - the foundation organisms that make almost everything happen. The true biodiversity in an ecosystem is not visible, as has been known for a long time; it's in all of those microscopic organisms, bacteria and fungi, in the soil and organic matter that drive nearly all vital ecosystem processes. The cuddly bears and the moose and the beautiful plants and tree stands are but a tiny proportion of the actual biodiversity, and they are critically dependent on what can't be seen by the naked eye.

"And yet, sadly, the charismatic megafauna is what is being focussed upon, the organisms that can be observed and counted by a lot of people - the public - and, therefore, by those whom they elect to govern. So, the grizzly bear gets the money; the bacteria and fungi don't."

Two Hits and a Miss: Books about Bugs

By Bette Beswick MEDES., P. Biol.

When winter hits, bug* hunting outside gets tough, so amateur collectors turn to poring over books. I have recently acquired three new publications on the topic. Two are bookshelf-worthy and one, well, not so much. (*Bug: technical term meaning anything with 6 or more legs.)



Bees, A Natural History by Christopher O'Toole is filled with amazing photographs. Chapters are organized on natural history themes, such as the ecology of

social bees and solitary bees, bees' role in pollination, bee pathologies and bees' relationship with humans. There is even a chapter dedicated to male bees but, alas, it doesn't explain how a human can tell the boys from the girls. It has a global application, but with a stronger link to European and African examples than North America. The book achieves the objective of broadening a reader's perception of bees beyond the familiar honey bee and bumble bee, to appreciate the other members of this order, such as mining bees, leaf-cutter bees, mason bees, and plasterer bees.

Although it's not difficult to read **Bees** from cover to cover because of the amount of interesting information provided (and don't forget all those photos!), I was frustrated with its failure to connect the early discussion of eight bee orders to the later reference to bees by common names, or to explain how an observer would distinguish among the orders. "Where does this fit?" seemed to be a constant question in my mind. And, it certainly did not help that cross referencing frequently sends a reader leafing through the book to the wrong page or figure (*@!%\$#). Would I recommend this book? Well, despite the photos, I would give it a miss.



An Identification Guide: Bumble Bees of North America by Paul Williams, Robin Thorp, Leif Richardson and Shiela Colla leads off with an excellent general

discussion of bumble bee ecology. There is a big surprise here: parts of Alberta have some of the highest species richness of bumble bee species in the world (i.e., 23 to 24 unique species in the Alberta's southern Rockies and foothills). Holy cow – and I thought all bumble bees were the same.

The bulk of the book is dedicated to species accounts for North America's 46 species of bumble bees. Each account includes photos of the species, a description of the identifying features for both hand and microscopic characteristics, and a distribution map. The pattern variation among bees of the same species is surprisingly varied, and this is illustrated by colour pattern images showing typical queen, worker and male markings. (Thankfully, this book explains how to tell the difference between the boys and girls.) The habitats, range, example food plants, behavior and parasitism by other bees are also described. This is not a book that will break the bank – Chapters/Indigo lists it for less than \$20.



I have saved the best for last: For a number of years, I have been trying to identify spiders but have been discouraged by the lack of a reference that fits somewhere between the typical insect guide with pictures of a few nondescript spiders included as an afterthought, and Kaston's **How to Know**

the Spiders and more recently published **Common Spiders of North America** (Paquin, Cushing and Roth [eds]). Basic family descriptions that start, "Ecribellate, entelegyne spiders with two tarsal claws and eight eyes with greatly enlarged AME. Both AER and PER recurved" are overwhelmingly technical for this novice. **Common Spiders of North America**, by Richard A. Bradley and illustrated by Steve Buchanan, has come to the rescue. It is a useful book. It is a beautiful book.



Common Spiders is divided into three general sections. In the first, general spider biology is discussed, and general advice

about how to build a collection is provided. Its information on how to identify the main spider groups is truly helpful. The next section consists of 82 coloured plates of computer-generated images, each plate showing 6 to 12 species. Steve Buchanan created the initial images based on pictures and specimens, then revised them following Bradley's review. In the final section, each family is described with minimal use of technical jargon, along with species accounts for the species illustrated in the plates. If you like spiders, or think maybe you might like them if you knew them better, this is the book for you, even at its \$60 price tag!

Bette Beswick, MEDES., P. Biol. is a longstanding member of the ASPB and has served as the Society's Registrar for a number of years. She says she is keen to learn more about insects and spiders but admits that, at the moment, she has a lot to learn!

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ANNIVERSARY



March 31 - April 1, 2015

Coast Canmore Hotel & Conference Centre
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The conference will celebrate forty years of the professional practice of biology in Alberta and the growing public demand for accountability in the management of our ecosystems. It will examine changes we have witnessed on the landscape over the last 40 years in the province, and the current public perceptions of working biologists.

This will be an excellent opportunity for biologists, regulators, resource managers and industry to learn about and discuss how biology affects policy decision making and the future of biological resources in Alberta. Topics will include how all sectors can work together to protect resources in the province; Alberta's history of regulating remediation and reclamation and, of course, the impact of the 2013 flood in southern Alberta.



*Early Bird Registration ends
February 15, 2015*

**For more information and to register,
go to www.aspb.ab.ca/conference**

PHOTOGRAPHY BY ROB COOK

The Alberta Society of Professional Biologists (ASPB) is a professional society which is committed to the promotion of excellence in the practice of biology.